

Correspondence

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TO THE EDITOR, *Genitourinary Medicine*

Biological false positive reactions in treponemal serological tests used to diagnose syphilis

Sir,
Since 1978 we have used two treponemal serological tests in Denmark, the fluorescent treponemal antibody absorbed (FTA-ABS) test and the *Treponema pallidum* immobilisation (TPI) test, as second line tests in the diagnosis of syphilis.^{1,2} Reactivity in one or both of these specific treponemal serological tests is often regarded as a major indication of past or present treponemal infection. About 5000 to 7000 serum samples, taken from patients with or without anamnestic support or signs or symptoms of syphilis attending sexually transmitted disease (STD) clinics or doctors in Denmark, have been analysed each year. Biological false positive reactions occurred in 2% of FTA-ABS and TPI tests when healthy blood donors were examined (table). None of the blood donors tested were reactive in both FTA-ABS and TPI tests (table),

The Danish syphilis index, which contains information about most treponemal infections diagnosed in Denmark since 1920, was used in the classification of the patients.⁴ None of the above STD patients with biological false positive reactions in the FTA-ABS or TPI tests later developed syphilis, and most of these patients became non-reactive in the treponemal serological tests without receiving antitreponemal antibiotics.

The CWRM test used in the department of treponematoses as a lipoidal serological screening test has, in comparison, a specificity of 99.8%.³ Biological false positive reactions in the CWRM test are therefore seen in only 0.2% of the serum samples examined, compared with 2.3% in the FTA-ABS or TPI tests.

In conclusion, patients showing reactivity in only one treponemal serological test without having other positive indications of syphilis may often be considered to be biological false positive reactors. The treponemal serological tests should never be used as screening tests in the diagnosis of syphilis, as these tests only have a "high specificity" when they are used as

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TO THE EDITOR, *Genitourinary Medicine*

Is there a critical time for prophylaxis against neonatal gonococcal ophthalmia?

Sir,
Gonococcal infections are common in women attending gynaecological and obstetric services in Addis Ababa.¹ In the absence of effective prophylaxis, attack rates of neonatal gonococcal ophthalmia (NGO) may be as high as 30%.² Though the statutory use of prophylaxis against NGO has been in effect for more than six decades, the timing of such a procedure in relation to birth has not been clearly established. As the use of silver nitrate is associated with high incidence of chemical conjunctivitis,³ it has been recommended that the administration of prophylaxis should be withheld for a few hours after birth to promote bonding between infant and mother.⁴ We recently had an opportunity to study the effect of delay in the application of prophylactic eye treatment on the prevention of NGO in Addis Ababa when the routine use of both silver nitrate and tetracycline ointment was disrupted because of irregular drug supply.

All infants born in this hospital and its affiliated maternal and child health clinics were traced and examined between the fourth and seventh day after birth. When available, prophylaxis was given before discharge from hospital. The infant's age at prophylaxis was noted. Neonatal ophthalmia was diagnosed when there was purulent or mucoid discharge. NGO was diagnosed when Gram negative intracellular diplococci were identified in the eye discharge. The presence of Gram negative intracellular diplococci in such inflammatory exudate can identify

TABLE *Biological false positive reactions in the fluorescent treponemal antibody absorbed (FTA-ABS) test and the Treponema pallidum immobilisation (TPI) test in serum samples from patients attending STD clinics in Denmark and in healthy blood donors*

Source of serum samples	n	No (%) giving following reactions:			
		FTA-ABS- TPI-	FTA-ABS+ TPI-	FTA-ABS- TPI+	FTA-ABS+ TPI+
Healthy blood donors	302	291 (96)	6 (2)	5 (2)	
STD patients (no syphilis)	883	829 (94)	26 (3)	27 (3)	

+ = Positive, - = negative reactions.

however, and none were reactive in the automated reagin test (ART).²

In 1980-1 we found that 53 out of 883 serum samples examined from patients attending STD clinics (none of whom gave a history of syphilis, had signs or symptoms suggesting recent syphilis infection, or were reactive in the cardiolipin Wassermann test with Mørch's modification (CWRM) and in the Kahn's standard test³ gave biological false positive reactions in the FTA-ABS or the TPI test (table).

confirmatory tests on highly selected serum samples from patients who have had, or are suspected of having, a treponemal infection.

Yours faithfully,
Carsten Sand Petersen

Department of Dermatovenereology,
Bispebjerg Hospital,
Copenhagen, Denmark

References

1. US Department of Health, Education and

gonococcal infection with a sensitivity of 93%, a specificity of 98%, and an accuracy of 95% compared with standard culture methods.⁵ All cases of NGO were treated according to established recommendations.⁶

Of the 502 infants born during four weeks, the following were excluded from analysis: 52 delivered by caesarean section, 36 referred for special neonatal care, and six who died within 24 hours after birth. Of the remaining 408 neonates, 175 (42.9%) were discharged before receiving eye prophylaxis. Eleven of these infants developed NGO. The odds ratio for the development of NGO in our sample was 5.14 ($p < 0.01$), with a 95% confidence interval of odds ratio of 1.6-16.6. When those who received prophylaxis were analysed by age at administration of prophylaxis, a trend of effect (Mantel extension test) with increasing delay in prophylaxis was detected (table). This finding indicates

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TABLE Effect of timing of prophylaxis on risk for neonatal gonococcal ophthalmia (NGO)

	n	No (%) with NGO:		Standardised risk ratio*
		Present	Absent	
Prophylaxis at:				
≤4 hours	160	1 (0.6)	159 (99.4)	1.00
>4 hours	73	2 (2.7)	71 (97.3)	4.48
No prophylaxis	175	11 (6.3)	164 (93.7)	10.67

* X^2 Mantel extension test, = 2.85; $p < 0.01$.

that the timing of prophylaxis is an important factor modifying the efficacy of tetracycline or silver nitrate in the prevention of NGO. The number of cases representing "prophylaxis failure" were too few for us to assess more accurately the critical time for the administration of prophylaxis to prevent NGO. Our data, however, suggest that delay in prophylaxis beyond four hours after birth is associated with 4.5-fold increase in risk for NGO.

Yours faithfully,
Lulu Muhe
Nebiat Tafari

Ethio-Swedish Children's Hospital,
Department of Paediatrics and Child
Health,
Faculty of Medicine,
Addis Ababa University,
Ethiopia

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TO THE EDITOR, Genitourinary Medicine

Infection of a surgical wound by β lactamase producing *Neisseria gonorrhoeae*

Sir,

Infections with *Neisseria gonorrhoeae* occur most commonly in the genitourinary tract and can cause urethritis, cervicitis, salpingitis, and Bartholinitis. Other clinical manifestations include pharyngitis, conjunctivitis, anorectal infections, the arthritis-dermatitis syndrome, and exceptionally perihepatitis, endocarditis, and meningitis.^{1,2} The mechanism of transmission is by contact with exudates from infected mucous membrane, almost always as a result of sexual activity.²

We present an exceptional location of *N gonorrhoeae* infection — a surgical wound. The patient was a Spanish woman aged 29 who came from Equatorial Guinea. After undergoing a caesarean section in our hospital, she developed a fever and had clinical signs of infection of the abdominal wall at

the site of the incision. Eight days after surgery an abscess was drained. Culture on aerobic and anaerobic media produced a growth (in aerobic conditions only) of a Gram negative, oxidase positive diplococcus later identified as *N gonorrhoeae* (by sugar oxidation in CTA medium and agglutination with the Phadebact gonococcus test).

The gonococcus was also isolated from an endocervical specimen. β lactamase production was detected by a chromogenic cephalosporin method. The isolate had a 4.7 megadalton R plasmid but not a 24.5 megadalton transfer plasmid. Susceptibility testing on GC agar supplemented with chocolate horse blood inoculated with 10^6 bacteria/ml and incubated for 24 hours, showed minimum inhibitory concentrations of 8 mg/l of penicillin, 8 mg/l of tetracycline, 2 mg/l of cefoxitin, 0.03 mg/l of cefotaxime, 16 mg/l of streptomycin, 32 mg/l of kanamycin, 8 mg/l of gentamicin, and 32 mg/l of spectinomycin.

The surgical wound must have been contaminated from the original endocervical infection by the hands of either the patient or hospital staff, as other mechanisms seem improbable. The patient, who was also diagnosed as having malaria due to *Plasmodium vivax*, recovered completely after treatment with cefoxitin, chloroquine, and primaquine.

We thank Dr Rafael Rotger Anglada for making the plasmid study of the strain.

Yours faithfully,
E Pérez Trallero
J García Arenzana
G Cilla Eguiluz
J Larraz Soldevilla

Clinical Microbiology and Department of
Obstetrics and Gynaecology,
"Nuestra Señora de Aránzazu" Hospital
School of Medicine,
University of the Basque Country,
San Sebastian, Spain

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